

SOUTHAMPTON

***water
treatment
plant***

1
9
6
7

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca



ONTARIO WATER RESOURCES COMMISSION
OFFICE OF THE GENERAL MANAGER

Members of the Southampton Local Advisory Committee,
Town of Southampton.

Gentlemen:

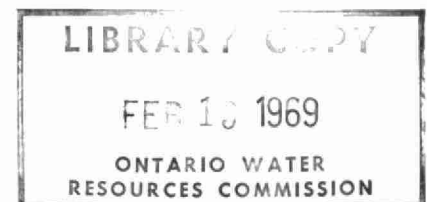
We are happy to present you with the 1967 Operating Summary for the
Southampton Water Treatment Plant, OWRC Project No. 6-0124-63.

Your co-operation with our staff throughout the year has been appreciated.

Yours very truly,

A handwritten signature in dark ink, appearing to read "D. S. Caverly".

D. S. Caverly,
General Manager.



#1



ONTARIO WATER RESOURCES COMMISSION

801 BAY STREET
TORONTO 5

J. A. VANCE, LL.D.
CHAIRMAN

J. H. H. ROOT, M.P.P.
VICE-CHAIRMAN

TELEPHONE 365-

D. S. CAVERLY
GENERAL MANAGER
W. S. MACDONNELL
COMMISSION SECRETARY

General Manager,
Ontario Water Resources Commission.

Dear Sir:

I am pleased to submit to you the 1967 Operating Summary for the Southampton Water Treatment Plant, OWRC Project No. 6-0124-63.

The summary reviews progress during the year, outlines operating problems encountered and summarizes in graphs, charts and tables all significant flow and cost data.

Yours very truly,

A handwritten signature in cursive script, reading "D. A. McTavish".

D. A. McTavish, P. Eng.,
Director,
Division of Plant Operations.

FOREWORD

● This operating summary has been prepared in order to acquaint readers with the management of the project during 1967. The efficiency of the plant's operation is reflected in a general review. Significant financial details are recorded, and technical performance is illustrated by graphs and charts.

The summary should answer two salient questions. Are the project's facilities adequate at this time? And can the project meet future requirements?

The Regional Operations Engineer is primarily responsible for the preparation of the report, and will be pleased to answer any questions regarding it.

Most of the material for the graphs and charts was compiled by the statistics section of the Division of Plant Operations, with the final versions of the graphs being drawn by the draughting section of the Division of Sanitary Engineering. Cost data were provided by the Division of Finance.

It will be evident from the report that all of these groups co-operated with substantial success.

C O N T E N T S

Foreword	1
Title Page	3
'67 Review	5
Project Costs	6
Operating Costs	7
Process Data	9
Conclusions	Inside back cover

SOUTHAMPTON
water pollution control plant

operated for
THE TOWN OF SOUTHAMPTON
by
THE ONTARIO WATER RESOURCES COMMISSION

CHAIRMAN: Dr. James A. Vance

VICE-CHAIRMAN: J. H. H. Root, M. P. P.

COMMISSIONERS

W. D. Conklin, Q. C. H. E. Brown
D. A. Moodie L. E. Venchiarutti

GENERAL MANAGER: D. S. Caverly

ASSISTANT GENERAL MANAGERS

L. E. Owers K. H. Sharpe
F. A. Voegel A. K. Watt

COMMISSION SECRETARY

W. S. MacDonnell

DIVISION OF PLANT OPERATIONS

DIRECTOR: D. A. McTavish

Assistant Director: C. W. Perry
Regional Supervisor: A. C. Beattie
Operations Engineer: A. Clark

801 Bay Street Toronto 5

'67 REVIEW

During 1967 a total of 109.494 million gallons of water was treated, or a daily average of approximately 0.3 mg. A maximum daily flow of 0.827 mg was pumped during the week ending August 30, 1967.

During the year the plant underwent an extensive program of equipment testing and evaluation to ensure that all equipment performed as specified.

The project was frequently inspected and checked by the Special Services section, the Maintenance section, the Project Services engineer, and the operations engineer of the Division of Plant Operations.

The complexity of the system required that all those involved in it became thoroughly familiar with all aspects of the operation.

All efforts in 1967 were directed toward the establishment of a routine operation and the reduction of operating costs.

PROJECT COSTS

NET CAPITAL COST (Estimated)
Long Term Debt to OWRC

\$425,755.47

Debt Retirement Balance at Credit
(Sinking Fund) December 31, 1967

\$ 18,101.20

Net Operating

\$ 17,684.60

Debt Retirement

8,591.00

Reserve

2,414.25

Interest Charged

22,719.33

TOTAL

\$ 51,409.18

RESERVE ACCOUNT

Balance at January 1, 1967

\$ 2,519.75

Deposited by Municipality

2,414.25

Interest Earned

196.83

\$ 5,130.83

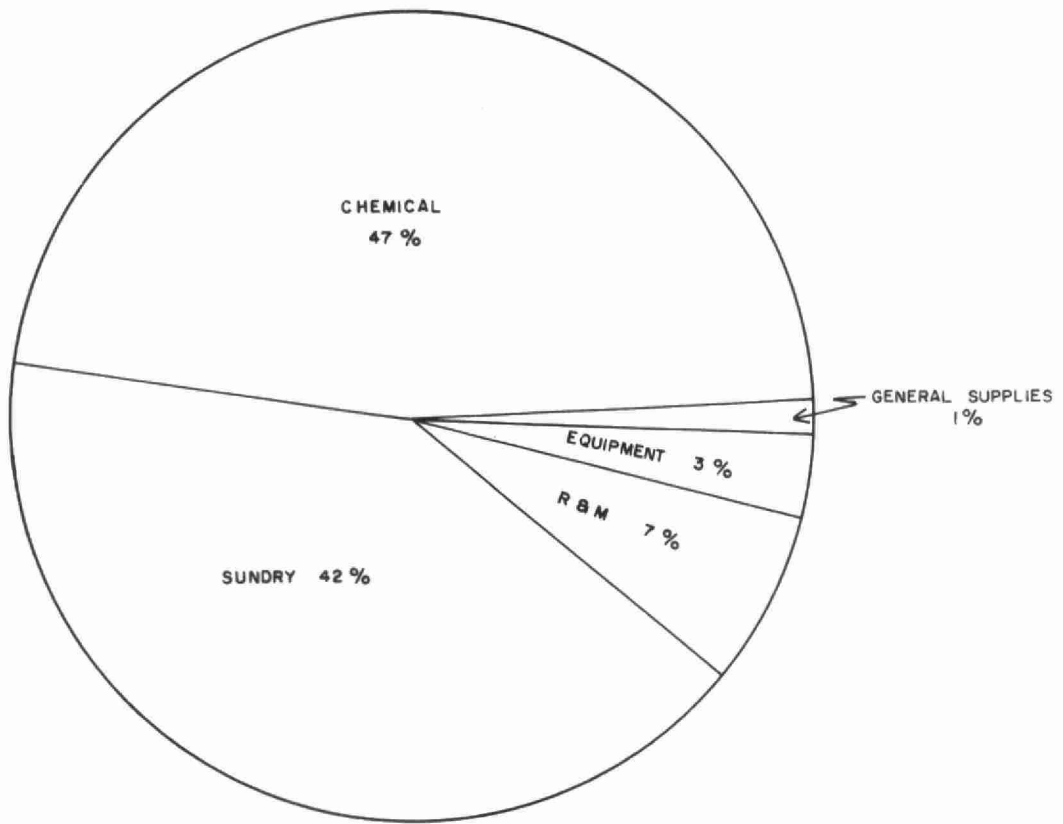
Less Expenditures

-

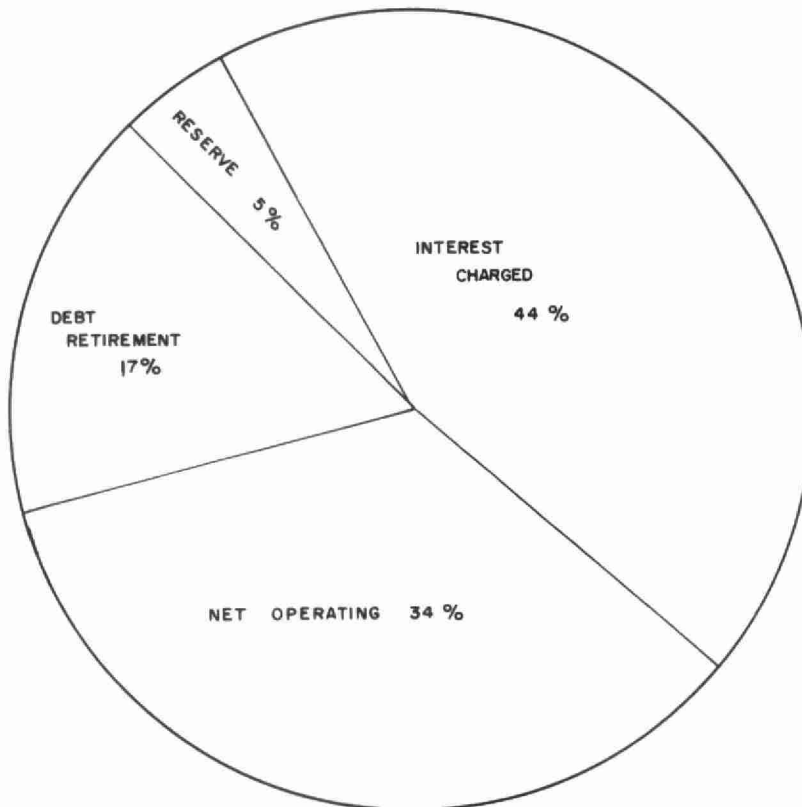
Balance at December 31, 1967

\$ 5,130.83

1967 OPERATING COST



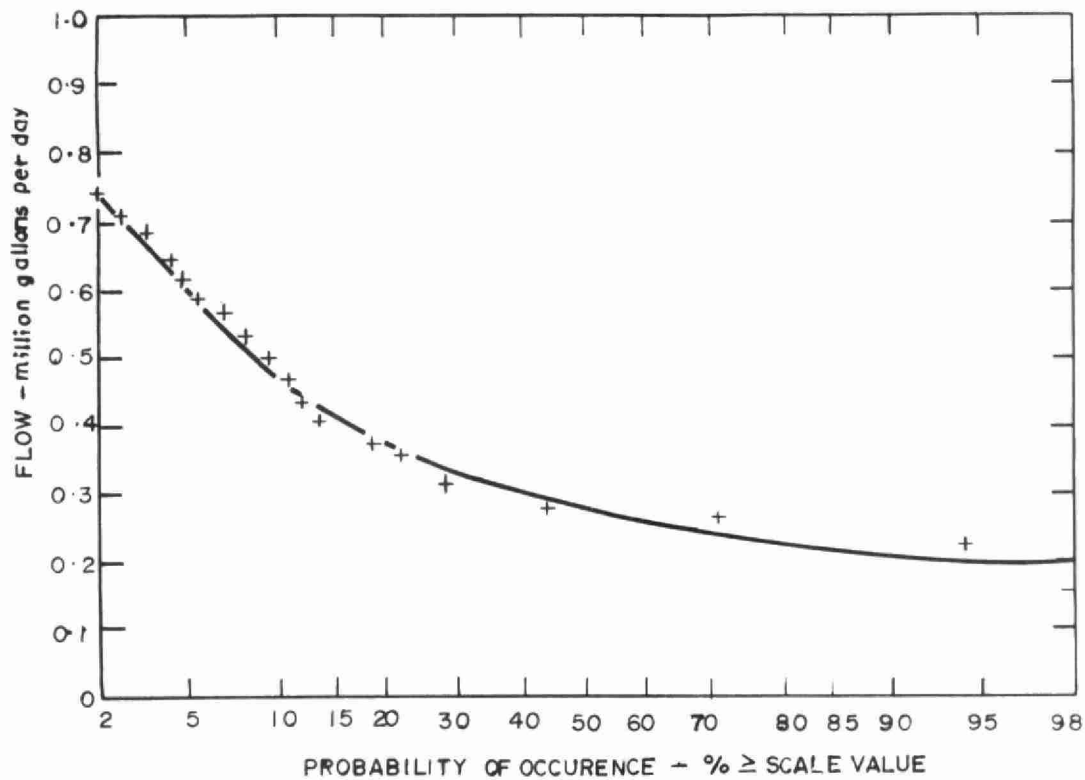
TOTAL ANNUAL COST



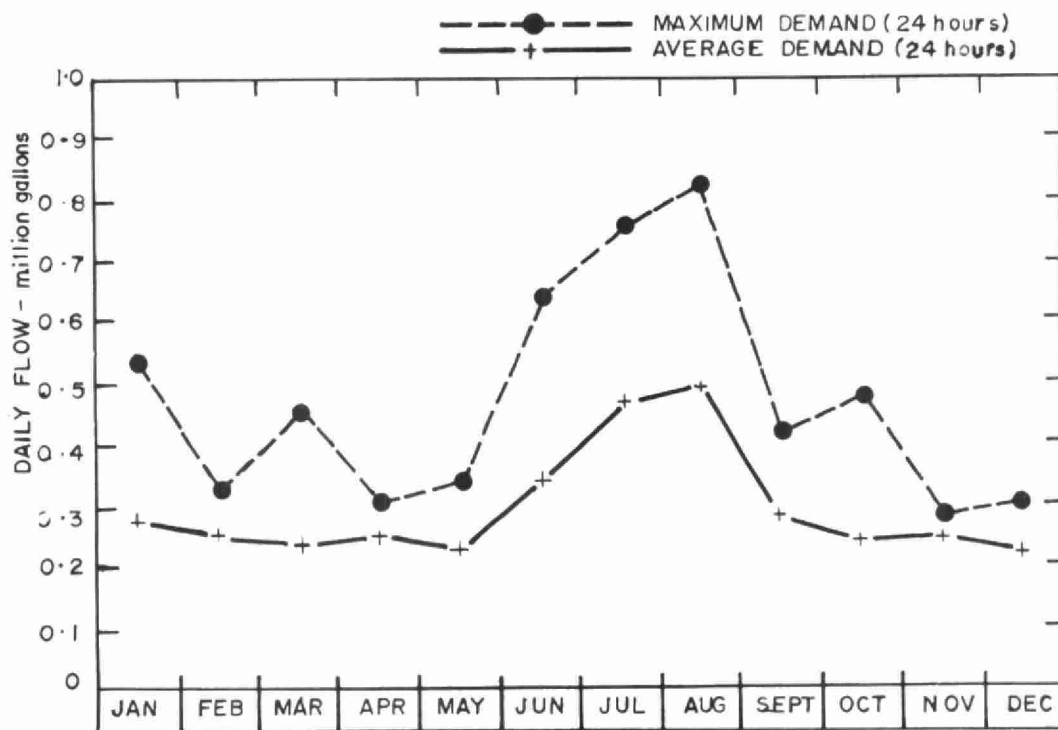
Process Data

The average monthly flow during the winter months was approximately 0.25 mg. The average monthly flow for the summer months was approximately 0.40 mg.

However, these figures do not reflect the peak demands during the summer which at times were well in excess of the filtration capacity of the plant. It would appear that the present standpipe does not have sufficient storage capacity to act as a buffer against excessive demands on the filtration system.

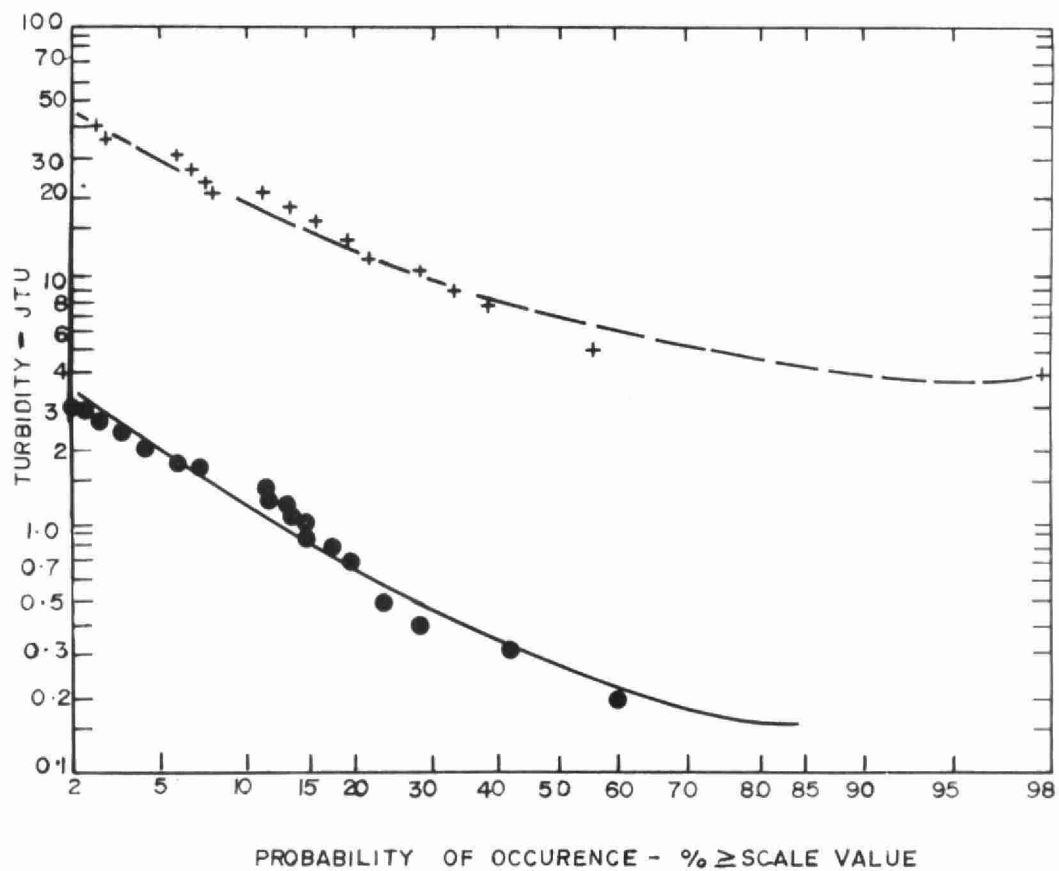


FLWS

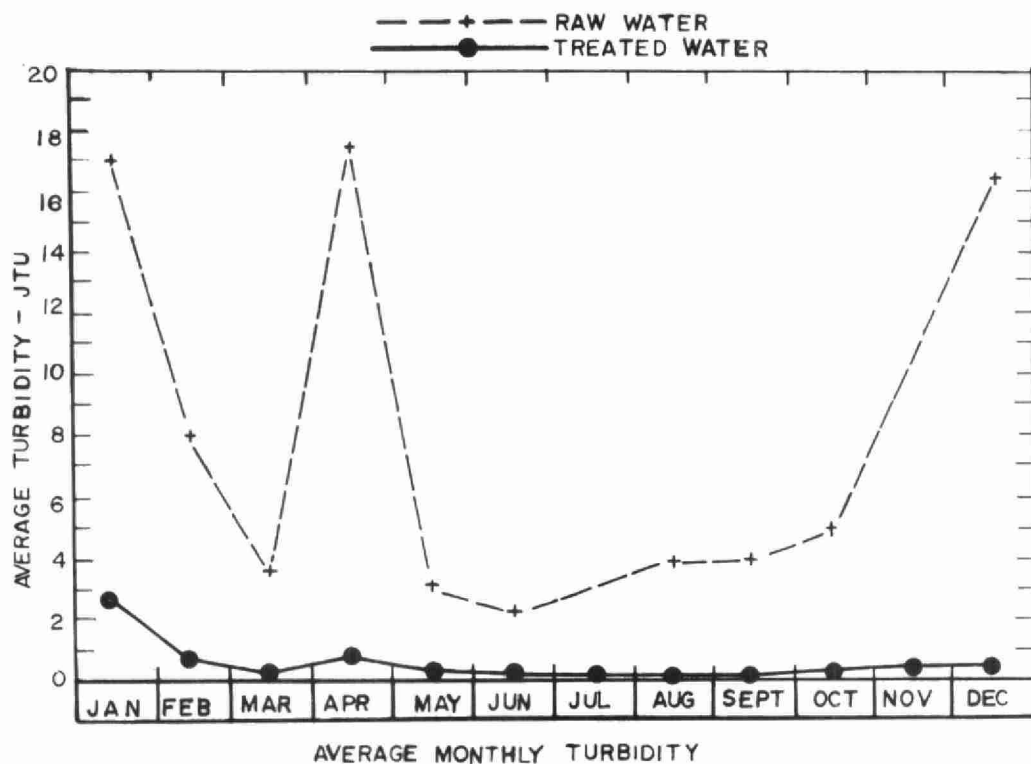


FLOW DATA

Month	Total Flow (MG)	Avg. Daily Flow (MGD)	Max. Daily Flow (MG)	Min Daily Flow (MG)
January	8.927	.288	.540	.239
February	7.159	.256	.330	.219
March	7.499	.242	.406	.200
April	7.545	.252	.313	.170
May	7.382	.238	.348	.171
June	10.364	.345	.636	.225
July	14.722	.475	.760	.319
August	15.435	.498	.827	.170
September	8.508	.284	.421	.170
October	7.606	.245	.479	.197
November	7.461	.249	.286	.212
December	6.886	.222	.308	.169
Total	109.494			
Average		.300		



TURBIDITY



TURBIDITY

Month	RAW WATER		TREATED WATER
	Avg. Turbidity (J. T. U.)	Max. Day (J. T. U.)	Avg. Turbidity (J. T. U.)
January	17.3	50.0	2.9
February	8.0	18.0	0.8
March	3.6	30.0	0.3
April	17.4	50.0	0.9
May	3.1	8.0	0.2
June	2.3	7.0	0.1
July	3.2	10.1	0.1
August	4.1	18.0	0.1
September	4.1	14.5	0.1
October	5.7	30.0	0.2
November	11.1	60.0	0.3
December	17.1	40.4	0.3

Note: J. T. U. = Jackson Turbidity Unit

COMMENTS

The raw water turbidity has risen above the design level. The result is that the treated water turbidity exceeds the desired level of 1.0 unit, 14 percent of the time. High raw water turbidity levels are prevalent during the spring and winter.

DIATOMACEOUS EARTH USED

MONTH	TOTAL D. E. USED (LB.)	DOSAGE LB. /MG
January	11250	1260
February	5700	796
March	3900	500
April	9350	1239
May	4000	542
June	5600	540
July	4550	309
August	6350	411
September	3950	464
October	5450	716
November	9450	1267
December	9500	1380
Total	79050	-
Average	6588	785

COMMENTS

Diatomaceous earth usage remains higher than anticipated. Studies in this area indicate that the problem lies in the slurry mixing and feed section of the plant. Several modifications have been made or are presently under consideration in an effort to reduce the amount of diatomaceous earth required per unit of turbidity removed.

CHLORINE USED

Month	Total Used LB.	Average Dose PPM	Residual PPM
January	103	1.15	.5
February	88	1.22	.5
March	102	1.36	.5
April	99	1.31	.5
May	96	1.30	.5
June	120	1.16	.5
July	149	1.01	.5
August	162	1.04	.5
September	92	1.08	.4
October	70	.92	.4
November	90	1.20	.5
December	85	1.23	.4
Total	1258	-	-
Average	105	1.17	.5

COMMENTS

An average dosage of 1.17 ppm chlorine was required to maintain the required residual of 0.5 ppm.

Date Due

#1



CONCLUSIONS

During 1967 the overall operation of the project became more regular and efficient as operational difficulties were overcome. Increased raw water turbidity and peak summer demands strained the filtration capacity.

RECOMMENDATIONS

It would appear that the present 64-year-old standpipe does not have sufficient capacity to buffer peak summer demands. It is recommended that new or increased storage capacity be considered.

